14. (Amended) The system of claim 1, further including an application program interface call to display a default input device configuration.

20. (Amended) The system of claim 1 wherein the application is a game application.

21. (Amended) The system of claim 1 wherein the input device includes a mouse, keyboard, game controller, force feedback device, or combinations thereof.

29. (Amended) The method of claim 27 further including, in response to a request from the application, enumerating input devices attached to the system that are most suitable to the application.

30. (Amended) A computer-readable medium including computer-executable instructions to perform a method for using a computer input device with a software application, comprising:

an application program interface, responsive to a call from an application, that returns an enumeration of input devices that substantially match the actions of the application; and

an application program interface, responsive to a call from the application, that uses one of the enumerated input devices selected by the application to build an action-to-control mapping.

REMARKS

Reconsideration of the application is respectfully requested in view of the foregoing amendments and following remarks. Claims 20 and 21 have been amended to correspond in type with claim 1, from which they depend. Claim 29 has been amended to properly depend from claim 27. No new matter has been introduced. With entry of these amendments, claims 1-30 remain pending in the application.

Objection to claims 1-3, 5-11, 13, 14, and 30

The Examiner objects to claims 1-3, 5-11, 13, 14, and 30 for containing a term that is vague. The applicant has amended claims 1, 2, 5-11, 13, 14, and 30 to address the Examiner's objection.

Rejection of claims 1-30 under 35 U.S.C. § 102(e)

The Examiner rejects claims 1-30 as allegedly being anticipated by 35 U.S.C. §102 (e).

More specifically, the Examiner alleges that claims 1, 20, and 22 are unpatentable as being

anticipated by McCauley, U.S. Patent 6,263,392, ("McCauley") and that claims 1-19 and 21-30 are

unpatentable as being anticipated by Chan, et al., U.S. Patent 5,991,546, ("Chan"). The rejections

are respectfully traversed.

Rejection of claim1 under 35 U.S.C. § 102(e)

The Examiner argues McCauley and Chan each teach a system for mapping an input device's

controls with an application having all the requirements recited in claim 1.

Claim 1 of the present application as amended provides:

a user input device having a plurality of controls;
an application that implements actions in response to activation of the controls
of the user input device; and
an application program interface that receives calls from the application, the
application program interface including a call that creates an association between
actions in the application and the controls on the input device.

(Emphasis in Original Claim.)

McCauley

The limitation of claim 1 that requires an "application program interface including a call that

creates an association between actions in the application and the controls on the input device" is not

met by McCauley column 6, lines 1-6, by column 7, line 67 to column 8, line 2, nor by any other

part of McCauley.

McCauley is generally directed to a method and apparatus for interfacing multiple peripheral

devices to a host computer. More specifically, McCauley discloses a universal game computer

interface ("UGCI") that includes an operating system that enables the UGCI to accept peripheral data

packets and signal data, format the received data packets and signal data into human input devices

("HID") report descriptors and HID reports, and transmit the HID reports over a USB cable to the

host PC. (McCauley column 6, lines 1-6). The interface controller also transmits descriptors

corresponding to each peripheral device to the host PC. (McCauley column 7, line 67 to column 8,

line 2). As disclosed by McCauley, the transmissions are between the interface and the host PC.

This transmission is not does interact with the application and as such does not meet the limitation of

claim 1 that requires an "application program interface including a call that creates an association between actions in the application and the controls on the input device."

Accordingly, the 35 U.S.C. § 102 rejection of claim 1 under McCauley should be removed because each and every requirement of claim 1 is not found, either expressly or inherently, in McCauley.

Chan

The Examiner also argues that Chan teaches a system for mapping an input device's controls with an application having all the requirements recited in claim 1. The requirement of "the application program interface including a call that creates an association between actions in the application and the controls on the input device" is not met by Chan column 5, lines 14-20, by column 3, lines 55-59, nor by any other part of Chan.

In general, Chan is directed to a system and method for interfacing peripheral devices to a computer universal serial bus. The interfacing system includes a serial EEPROM that is accessed to map sensed key locations for one or more keys into the value that is to be transmitted to the USB. A keyboard-processing capability maps vendor-specific keycodes of the detected keys to their corresponding HID values, which are USB-standardized keycodes, using vendor-supplied tables stored in the EEPROM. (Chan column 5, lines 14-20). Chan is primarily concerned with transmitting standardized USB keycodes from a variety of peripheral devices the USB. This transmission is not between the interface and an application, but rather between the interface and the USB. Thus, the transmission does not "create an association between actions in the application and the controls on the input device." Accordingly, Chan does not disclose the limitation of claim 1 that requires an "application program interface including a call that creates an association between actions in the application and the controls on the input device."

Therefore, the 35 U.S.C. § 102 rejection of claim 1 under Chan should be removed because each and every requirement of claim 1 is not found, either expressly or inherently, in Chan.

Rejection of claims 2-21 under 35 U.S.C. § 102(e)

Claims 2-21 are dependent on claim 1 and are allowable for at least the reasons stated above.

<u>Rejection of claim 22 under 35 U.S.C. § 102(e)</u>

The Examiner argues McCauley and Chan each teach a method of communicating between an input device and an application in a system having all the requirements recited in claim 22.

Claim 22 of the present application provides:

> (a) issuing, from the application, a call to enumerate a suitability of input devices installed in the system, the call including an array of actions that the application uses;
> (b) in response to the application call, examining the input devices installed on the system by comparing controls on the input devices with <u>actions used by the application;</u>
> (c) ranking the input devices based on the comparison; and
> (d) providing the application with at least the highest ranked input device that most closely matches the actions of the application.

<u>McCauley</u>

The limitation of claim 22 that requires "examining the input devices installed on the system by comparing controls on the input devices with actions used by the application" is not met by McCauley column 3, lines 1-15 column 4, lines 1-15, nor by any other part of McCauley.

McCauley discloses a method that includes the reading of peripheral state information of certain peripheral devices by an interface control module, where the peripheral state information may be indicative of instantaneous mechanical position of an analog potentiometer and/or indicative of an alternately manually depressed and released button. (McCauley column 3, lines 1-7) The interface control module transmits formatted data packets, such as HID report descriptors, and formatted signal data, such as HID reports, to the host computer via a communications interface, or bus. (McCauley column 3, lines 7-11). The HID report descriptors are substantively formatted according to the HID standard and the archetype and the archetype and/or structure of the corresponding peripheral device while the HID reports are formatted substantively in accordance with the HID standard and a reading of the state information as read from a specific peripheral device. McCauley column 4, lines 1-15, as cited by the Examiner, states:

> The interface control module operating system is preprogrammed to recognize and expect that a particular HID class or type of peripheral device will be connected to a particular connector of the interface control module. A HID report descriptor corresponding to a HID peripheral archetype, that relates to the expected HID peripheral class or type, is then created and transmitted to the host computer during an enumeration process cycle of the interface control module. Appropriately formatted HID reports are thereafter generated by the interface control module, and transmitted to the host computer, on the basis of the HID class or type of peripheral

device and the instantaneous state data read from the peripheral device by the interface control module.

Accordingly, McCauley teaches an interface control module that recognizes and expects a particular HID class or type of peripheral device. The interface control module also creates and transmits a HID report descriptor corresponding to HID peripheral archetype. Neither of these steps disclose "examining the input devices installed on the system by comparing controls on the input devices with actions used by the application." Therefore, the 35 U.S.C. § 102 rejection of claim 22 under McCauley should be removed because each and every requirement of claim 22 is not found, either expressly or inherently, in McCauley.

Chan

The Examiner also argues Chan teaches a method of communicating between an input device and an application in a system having all the requirements recited in claim 22.

The limitation of claim 22 that requires "examining the input devices installed on the system by comparing controls on the input devices with actions used by the application" is not met by Chan column 5, lines 34-50 nor by any other part of Chan. The cited portion states:

> Host processing capability manages data flow in interface. In parallel with the keyboard-processing capability, a host-processing capability waits for device data requests from the host, and upon receipt of a request, determines whether the request is made to the keyboard endpoint or mouse endpoint, if the request is for data from the keyboard endpoint, the host-processing capability responds to the host with any device reports (such as keyboard input reports or PS/2 device reports) that are available. If the request is for data from the mouse endpoint, the host processing capability responds to the host with any mouse data which a mouse-processing capability has assembled. If an old device report cannot be sent to the host fast enough, the host processing capability accumulates the old report in a new report before transmitting the new report to the host.

In sum, Chan discloses an interface that receives requests from a host, determines whether the request is made to a keyboard or a mouse, and returns the corresponding data type to the host in an appropriate format. This process does not compare anything with actions used by the application and thus does not meet the limitation of claim 22 that requires "comparing controls on the input devices with actions used by the application." Accordingly, the 35 U.S.C. § 102 rejection of claim 22 under Chan should be removed because each and every requirement of claim 22 is not found in Chan.

Rejection of claims 23-26 under 35 U.S.C. § 102(e)

Claims 23-26 are dependent on claim 22 and are allowable for at least the reasons stated above.

Rejection of claim 27 under 35 U.S.C. § 102(e)

The Examiner argues Chan teaches a method for mapping an input device's controls with an application in a system having all the requirements recited in claim 27.

Claim 27 of the present application provides:

in response to a request from an application program to create an action-to-control mapping, reading stored user preferences for the action-to-control mapping and reading a stored default file that includes manufacture provided defaults for the action-to-control mapping;
reading a structure that includes action values and action semantics associated with the action values, the action values being defined by the application; and
using the stored user preferences and the stored default file to create an association between the action values associated with the application and the controls on the input device.

The limitation of claim 27 that requires the step of "reading stored user preferences" to be performed "in response to a request from an application program" is not met by Chan column 5, lines 15-50 nor by any other part of Chan. Chan discloses a PS/2 device processing capability that processes data from the host and makes it available to the PS/2 device and a host-processing capability that waits for device data requests from the host. (Chan column 5, lines 15-50). These processing capabilities communicate with the host. This communication with the host and the subsequent processes are not "a request from an application program." Accordingly, the 35 U.S.C. § 102 rejection of claim 27 under Chan should be removed because each and every requirement of claim 27 is not found in Chan.

Rejection of claims 28-29 under 35 U.S.C. § 102(e)

Claims 28-29 are dependent on claim 27 and are allowable for at least the reasons stated above.

Rejection of claim 30 under 35 U.S.C. § 102(e)

The Examiner argues Chan teaches a computer-readable medium including computer-executable instructions to perform a method for using a computer input device with a software application having all the requirements recited in claim 30.

Claim 30 of the present application provides:

> an application program interface, responsive to a call from an application, that returns an enumeration of input devices that <u>substantially match the actions of the application</u>; and
> an application program interface, responsive to a call from the application, that uses one of the enumerated input devices selected by the application to build an action-to-control mapping.

(Emphasis in Original Claim.)

The limitation of claim 30 that requires "an API, responsive to a call from an application, that returns an enumeration of input devices that <u>substantially match the actions of the application</u>" is not met by Chan column 5, lines 35-65 or any other part of Chan. As noted above, Chan discloses a PS/2 device processing capability that processes data from the host and makes it available to the PS/2 device and a host-processing capability that waits for device data requests from the host. (Chan column 5, lines 15-50). The host-processing capability receives requests from a host, determines whether the request is made to a keyboard or a mouse, and returns the corresponding data type to the host in an appropriate format. (Chan column 5, lines 35-50). This process is silent as to "actions of the applications." Furthermore, this process does not disclose returning "an enumeration of input devices that substantially match the actions of the application." Accordingly, the 35 U.S.C. § 102 rejection of claim 30 under Chan should be removed because each and every requirement of claim 30 is not found in Chan.

Rejection of claims under 35 U.S.C. § 103(a)

The Examiner alleges that claim 27 is unpatentable under 35 U.S.C. §103(a) as being obvious over McCauley in view of Chan. The rejection is respectfully traversed.

The Office action acknowledges that McCauley is silent as to creating "an association between the action values associated with the application and the controls on the input device."

Chan fails to remedy the deficiencies of McCauley. Chan is directed to a process that enables the processor to operate more rapidly to map one or actuated keys to a data output

representing the operator's command. (Chan column 3, lines 23-27). This process is directed to the accuracy of the peripheral device and is silent as to creating an "association between the action values associated with the application and the controls on the input device."
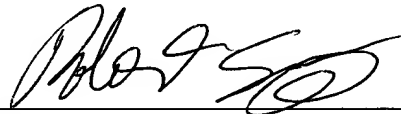
Claim 27 would not have been obvious over McCauley in view of Chan because both are silent as to creating an "association between the action values associated with the application and the controls on the input device." Accordingly, the 35 U.S.C. §103(a) rejection should be removed.

CONCLUSION

The claims in their present form should now be allowable. Such action is respectfully requested.

Respectfully submitted,

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**Marked-up Version of Amended Claims
Pursuant to 37 C.F.R. §§ 1.121(b)-(c)**

<u>In the Claims:</u>

1.   (Amended) A system for mapping an input device's controls with an application, comprising:

a user input device having a plurality of controls;

an application that implements actions in response to activation of the controls of the user input device; and

an [API] <u>application program interface</u> that receives calls from the application, the [API] <u>application program interface</u> including a call that creates an association between actions in the application and the controls on the input device.

2.   (Amended) The system of claim 1, wherein the application can override the association created by the [API] <u>application program interface</u>.

5.   (Amended) The system of claim 1, wherein the [API] <u>application program interface</u> considers user preferences in creating the association.

6.   (Amended) The system of claim 1, wherein the [API] <u>application program interface</u> considers information provided from the device manufacturer in creating the association.

7.   (Amended) The system of claim 1, wherein the [API] <u>application program interface</u> considers similar applications that a user has configured to determine the association between an action and a given device control.

8.   (Amended) The system of claim 1, wherein the [API] <u>application program interface</u> binds actions of the application to semantics in a genre by using a structure having an action value, a predefined action semantic associated with the action value, and a label for the action.

9.   (Amended) The system of claim 1, wherein the application passes a structure to the [API] <u>application program interface</u> that includes an action value and an action semantic associated with the action value.

10.   (Amended) The system of claim 9, wherein the [API] <u>application program interface</u> returns to the application an enumeration of input devices connected to the system that match the actions of the application.

11.   (Amended) The system of claim 9, wherein in response to an application call, the [API] <u>application program interface</u> examines all input devices connected to the system and invokes an application-defined callback function to enumerate the connected devices that match the application actions.

13.   (Amended) The system of claim 1, wherein the [API] <u>application program interface</u> ranks input devices based on suitability of actions of the application.

14.   (Amended) The system of claim 1, further including an [API] <u>application program interface</u> call to display a default input device configuration.

20.   (Amended) The [method] <u>system</u> of claim 1 wherein the application is a game application.

21.   (Amended) The [method] <u>system</u> of claim 1 wherein the input device includes a mouse, keyboard, game controller, force feedback device, or combinations thereof.

29.   (Amended) The method of claim [26] <u>27</u> further including, in response to a request from the application, enumerating input devices attached to the system that are most suitable to the application.

30.   (Amended) A computer-readable medium including computer-executable
instructions to perform a method for using a computer input device with a software application,
comprising:

an [API] application program interface, responsive to a call from an application, that returns
an enumeration of input devices that substantially match the actions of the application; and

an [API] application program interface, responsive to a call from the application, that uses
one of the enumerated input devices selected by the application to build an action-to-control
mapping.